

A Catherine Hill Bay Water Utility 2024 Operational Audit Summary

Audit Scope

- Operational Audit under the *Water Industry Competition Act 2006* (WIC Act).
- Licensee Catherine Hill Bay Water Utility (CHBWU) Pty Ltd (ACN 163 381 922).
- Network Operator's Licence No. 16_035 (<http://www.solowater.com.au/schemes/>).
- Drinking water, sewerage and recycled water services.
- Audit period: 1 November 2021 – 31 January 2024 (2 years and 3 months).
- IPART letter to the Licence Holder dated 31 January 2024 and identified with IPART reference number D24/1329.
- Interviews with Catherine Hill Bay Water personnel and a site inspection of Stage 3 infrastructure at Catherine Hill Bay on 8 April 2024.

Audit Participants

The audit was conducted by Dr Dan Deere and a quality assurance review was undertaken by Jim Sly. Both auditors hold relevant Lead Auditor accreditation on IPART's Technical Services and Water Licensing Panel. Catherine Hill Bay Water was represented Craig Heininger and Brad Irwin. IPART representative Jamie Luke attended as an observer. In creating the final audit report (issued 1 June 2024) from the draft report (issued 26 April 2024), no changes were made in response to any feedback from Solo Water. However, feedback from both IPART and the quality assurance reviewer resulted in amendments to the draft audit report to create a final audit report that corrected errors, removed ambiguities, and better addressed the audit criteria.

Auditor Declaration

This report presents the findings of an Operational Audit of Catherine Hill Bay Water Utility Pty Ltd's compliance with the requirements of its Network Operator's Licence (Licence No: 16_035) and the relevant provisions of the *Water Industry Competition (General) Regulation 2021* as they relate to the drinking water, sewerage and recycled water schemes at Catherine Hill Bay.

The auditor confirms that:

- the auditor was provided with sufficient evidence on which to base the conclusions reached during the audit;
- the audit findings accurately reflect the professional opinion of the auditor;
- the auditor has conducted the audit, determined the audit findings and prepared this report in accordance with the requirements of the Audit Guideline supporting the *Water Industry Competition Act 2006* (WIC Act), July 2020; and
- the audit findings have not been unduly influenced by the Licensee and/or any of its associates and express the auditor's opinion as to whether the Licensee has met the Licence conditions and regulatory requirements as specified in the scope.

Major Findings

The Licensee, Catherine Hill Bay Water Utility Pty Ltd, was found to have operated and maintained the drinking water, sewerage and recycled water schemes at Catherine Hill Bay in compliance with the assessed audit criteria during the audit period. That is, sufficient evidence was available to confirm that the requirements have been met for all assessed audit items. No non-compliances were identified.

Recommendations

No recommendations have been made as a result of this audit.

Two opportunities for improvement (OFI), which the Licensee may wish to consider, are identified in the body of the report.

B CHBWU 2024 operational audit criteria and findings

Table B.1 Audit Criteria – Water quality clauses

Licence clause	Licence obligation	Instructions	Audit requirements	Evidence assessed	Audit findings
WIC Reg Sch 1 cl. 7(1)(a)	Before commencing to operate water infrastructure commercially, the licensed network operator for the infrastructure must prepare, and forward to IPART, a water quality plan, in relation to the water supplied from the infrastructure, that specifies— (a) if the water supplied is drinking water—how the 12 elements of the framework for the management of drinking water quality, as detailed in the Australian Drinking Water Guidelines, have been addressed and will be implemented.	Audit elements 2-7, 11 and 12 as per the Australian Drinking Water Guidelines. Refer to the Adequacy column of Attachment D in this letter.	<ul style="list-style-type: none"> Check the Drinking Water quality plan is kept up to date and is relevant to the current scheme. Check the adequacy of CHBWU's Drinking Water quality plan against the requirements under the Australian Drinking Water Guidelines for elements 2-7, 11 and 12. 	<ul style="list-style-type: none"> Water Quality Management Plans – Document Status Table(s) Document Control Register (IMS-DOCC-G-2414 - DOCUMENT CONTROL REGISTER - SOLO WATER) Records of external NATA certified laboratory test results Stage 3 Scheme NIA and Licence Plan Audit Reports (#20033.001/002) Risk Register - Stage 3 (IMS-ENVM-G-3635-SW) SCADA CCP set-points screenshots Quarterly Internal Reports. Internal and External Audit Reports and plans (e.g. Audit Report 2022, Letter_AU1373C-QC-EC_Re-certification, IMS Audit Checklist - Procedure Compliance records) Customer feedback - Complaints Register (Smartsheet) 	<ul style="list-style-type: none"> Compliant. The Water Quality Plans (WQPs) have been fully implemented and kept under regular review as summarised in section E of this report. The actions included regularly reviewing and revising WQPs along with supporting documentation. The field inspection found alignment between the WQPs and the infrastructure as operating. Documents and records are backed up on a secondary server.

Licence clause	Licence obligation	Instructions	Audit requirements	Evidence assessed	Audit findings
				<ul style="list-style-type: none"> Operating Manuals and supporting procedures/checklists DITA Management System - Compliance Record Toolbox Meetings/Monthly IMS Document Update Notifications Calibration Register and records IMS-AIIR-B-0041-SW - IRNMP - Stage 3 - Document Status Table Environmental Incident Log and supporting documentation 	
WIC Reg Sch 1 cl. 7(4)(a)	The licensee must ensure the licensee's water quality plan is fully implemented and kept under regular review and that all of the licensee's activities are carried out in accordance with the plan.	Audit elements 2-7, 11 and 12 as per the Australian Drinking Water Guidelines and the Australian Guidelines for Water Recycling. Refer to the Implementation columns of Attachment D and Attachment E in this letter.	<ul style="list-style-type: none"> Check that the licensee has regularly reviewed the documents and systems that form the drinking water and recycled water quality plans. Check that all its activities are carried out in accordance with the plans. Desktop audit: this includes a desktop review of documentary evidence and interviews to test that all its activities are carried out in accordance with the plans. Site visit verification: site visit for on-site verification of implementation and testing of accuracy of evidence of implementation, as required. 	<ul style="list-style-type: none"> See above 	<ul style="list-style-type: none"> Compliant. See above for an overview and section E of this report for a detailed assessment.
NOL Sch B cl. 7.1	The Licensee must undertake any monitoring that is required for the purposes of this Licence, any Plan, the Act or the Regulation in accordance with this clause 7.	Audit		<ul style="list-style-type: none"> Water Quality Management Plans 	<ul style="list-style-type: none"> Compliant. Monitoring has been completed in accordance with the WQPs.

Licence clause	Licence obligation	Instructions	Audit requirements	Evidence assessed	Audit findings
				<ul style="list-style-type: none"> Water Quality Verification Monitoring Procedure (IMS-OPER-D-8305-SW) Water quality monitoring registers (IMS-CONT-G-1680-SW - CHB Water Quality Monitoring) Records of external NATA certified laboratory test results and weekly Field Water Quality Sampling Form's. 	
NOL Sch B cl. 7.2	The Licensee must keep the following records of any samples taken for monitoring purposes specified in the Water Quality Plan: <ul style="list-style-type: none"> a) the date on which the sample was taken; b) the time at which the sample was collected; c) the point or location at which the sample was taken; and d) the chain of custody of the sample (if applicable). 	Audit		<ul style="list-style-type: none"> Records of external NATA certified laboratory test results and COC's. Records of weekly Field Water Quality Sampling Forms Water quality monitoring registers (IMS-CONT-G-1680-SW - CHB Water Quality Monitoring, IMS-CONT-G-1675-SW - CHB Free Chlorine Field Verification) and supporting information. 	<ul style="list-style-type: none"> Compliant. Adequate records have been retained.
NOL Sch B cl. 7.3	The Licensee must ensure that analyses of all samples taken for the purposes of Verification Monitoring are carried out by a laboratory accredited for the specified tests by an independent body that is acceptable to NSW Health, such as the National Association of Testing Authorities or an equivalent body.	Audit		<ul style="list-style-type: none"> Records of external NATA certified laboratory test results. 	<ul style="list-style-type: none"> Compliant. Suitable NATA accredited test methods laboratories have been used (specifically ALS Newcastle, NATA Accreditation Number 825).

Table B.2 Audit Criteria – Sewage management clauses

Licence clause	Licence obligation	Instructions	Audit requirements	Evidence assessed	Audit findings
WIC Reg Sch 1 cl. 14(3)(a)	The licensee must ensure its sewage management plan is fully implemented and kept under regular review and all of its activities are carried out in accordance with the plan.	Audit	<ul style="list-style-type: none"> Check that the licensee has regularly reviewed the documents and systems that form the sewage management plan. Check that the licensee has kept the sewage management plan up to date and that the scheme is operated in accordance with the plan. Desktop audit: this includes a desktop review of documentary evidence and interviews to test that all its activities are carried out in accordance with the plan. Site visit verification: site visit for on-site verification of implementation and testing of accuracy of evidence of implementation, as required. 	<ul style="list-style-type: none"> Sewage Management Plan – Document Status Table(s) Document Control Register (IMS-DOCC-G-2414 - DOCUMENT CONTROL REGISTER - SOLO WATER) Water quality monitoring register (IMS-CONT-G-1680-SW - CHB Water Quality Monitoring) and supporting sampling records. Asset Inspection Checklist Procedure and forms (IMS-CONT-D-1691-SW/ IMS-OPER-D-8303-SW) Calibration Register and records SCADA CCP set-points screenshots Quarterly Internal Reports. Internal and External Audit Reports and plans (e.g. Audit Report 2022, Letter_AU1373C-QC-EC_Re-certification, IMS Audit Checklist - Procedure Compliance records) Customer feedback - Complaints Register (Smartsheet) Hazard Log Sheet and Environmental Incident Log and supporting documentation 	<ul style="list-style-type: none"> Compliant. The Sewage Management Plan (SMP) has been fully implemented and kept under regular review. This included regularly reviewing and revising the SMP along with supporting documentation. The field inspection found alignment between the SMP and the infrastructure as operating. The new excess recycled water pipeline was not audited as it was not yet operating. Documents and records are backed up on a secondary server.

Licence clause	Licence obligation	Instructions	Audit requirements	Evidence assessed	Audit findings
				<ul style="list-style-type: none"> Operating Manuals and supporting procedures/checklists DITA Management System - Compliance Record Toolbox Meetings/Monthly IMS Document Update Notifications CHB Pump Out Records (IMS-CONT-G-1676-SW) Incident Response Notification Management Plan (IRNMP) - IMS-AIIR-B-0041-SW, associated procedures and IPART Reporting Manuals. 	

Table B.3 Audit Criteria – Infrastructure clauses

Licence clause	Licence obligation	Instructions	Audit requirements	Evidence assessed	Audit findings
WIC Reg Sch 1 cl. 6(2)(a) (water)	The licensee must ensure that its infrastructure operating plan is fully implemented and kept under regular review and that all of its activities are carried out in accordance with the plan.	Audit	<ul style="list-style-type: none"> • Check that documents and systems that form the infrastructure operating plan have been reviewed regularly by the licensee. • Check that all its activities are carried out in accordance with the plan. • Desktop audit: this includes a desktop review of documentary evidence and interviews to test that all its activities are carried out in accordance with the plan. • Site visit verification: site visit for on-site verification of implementation and testing of accuracy of evidence of implementation, as required. 	<ul style="list-style-type: none"> • Infrastructure Operating Plan – Document Status Table • Document Control Register (IMS-DOCC-G-2414 - DOCUMENT CONTROL REGISTER - SOLO WATER) • Operating Manuals and supporting procedures/checklists • Quarterly Internal Reports. • Regulatory & Formal Requirements register (IMS-CONT-G-1677-SW) • DITA Management System - Compliance Record • Toolbox Meetings/Monthly IMS Document Update Notifications • Asset Inspection Checklist Procedure and forms (IMS-CONT-D-1691-SW/ IMS-OPER-D-8303-SW) • Internal and External Audit Reports and plans (e.g. Audit Report 2022, Letter_AU1373C-QC-EC_Re-certification, IMS Audit Checklist - Procedure Compliance records) • SCADA CCP set-points screenshots • Calibration Register and records • QSE Records (Various) 	<ul style="list-style-type: none"> • Compliant. • The Infrastructure Operating Plan (IOP) has been fully implemented and kept under regular review. • This included regularly reviewing and revising the IOP along with supporting documentation. • The field inspection found alignment between the IOP and the infrastructure as operating. • Documents and records are backed up on a secondary server.

Licence clause	Licence obligation	Instructions	Audit requirements	Evidence assessed	Audit findings
WIC Reg Sch 1 cl. 13(2)(a) (sewerage)	The licensee must ensure that its infrastructure operating plan is fully implemented and kept under regular review and, in particular, that all of its activities are carried out in accordance with the plan	Audit	<ul style="list-style-type: none"> Check that documents and systems that form the infrastructure operating plan have been reviewed regularly by the licensee. Check that all its activities are carried out in accordance with the plan. Desktop audit: this includes a desktop review of documentary evidence and interviews to test that all its activities are carried out in accordance with the plan. Site visit verification: site visit for on-site verification of implementation and testing of accuracy of evidence of implementation, as required. 	<ul style="list-style-type: none"> Infrastructure Operating Plan - Document Status Table Document Control Register (IMS-DOCC-G-2414 - DOCUMENT CONTROL REGISTER - SOLO WATER) Operating Manuals and supporting procedures/checklists Quarterly Internal Reports. Regulatory & Formal Requirements register (IMS-CONT-G-1677-SW) DITA Management System - Compliance Record Toolbox Meetings/Monthly IMS Document Update Notifications Asset Inspection Checklist Procedure and forms (IMS-CONT-D-1691-SW/ IMS-OPER-D-8303-SW) Internal and External Audit Reports (e.g. 1373-06 TA Audit Report - Solo Water) IMS Audit Checklist - Procedure Compliance records Calibration Register and records QSE Records (Various) 	<ul style="list-style-type: none"> Compliant. The Infrastructure Operating Plan (IOP) has been fully implemented and kept under regular review. This included regularly reviewing and revising the IOP along with supporting documentation. The field inspection found alignment between the IOP and the infrastructure as operating. The new excess recycled water pipeline was not audited as it was not yet operating. Documents and records are backed up on a secondary server.
NOL Sch B cl. 10.1	Each time the Licensee has brought any new Specified Water Industry Infrastructure into commercial operation, the Licensee must:	Audit	Check whether the newly constructed excess recycled water pipeline has been commissioned. If so, check if the licensee notified IPART within 10 days in accordance with the Reporting Manual.	Statement from Solo Water:	<ul style="list-style-type: none"> Not applicable. The newly constructed excess recycled water pipeline has not yet been commissioned.

Licence clause	Licence obligation	Instructions	Audit requirements	Evidence assessed	Audit findings
	<p>a) notify IPART in accordance with the Reporting Manual that it has brought the relevant Specified Water Industry Infrastructure into commercial operation; and b) provide such notification within 10 days after it has brought the relevant Specified Water Industry Infrastructure into commercial operation.</p>			<p>"The newly constructed surplus recycled water main commissioning was completed in August 2023 with the Stage 3 scheme New Infrastructure Audits and Licence Plan Audits completed. Final commercial operation has not commenced and has been delayed pending the Proponent (the developer) finalisation of fire trail rectification works (raised on the 27th Oct 2023) and easement valuation undertaken as part of the NPWS Part 5 REF approval component. Rectification works are subsequently completed and accepted by NPWS with final easement valuation in progress to allow finalisation of the easement agreement. To this date we still have not commenced commercial operation of the SRWTM awaiting formal written notification from NPWS. Refer to Stage 3 Scheme NIA and Licence Plan Audit Reports (#20033.001/002)."</p>	

Licence clause	Licence obligation	Instructions	Audit requirements	Evidence assessed	Audit findings
NOL Sch B cl. 11.1	<p>If the Licensee becomes aware that a customer's Plumbing is not Code Compliant, the Licensee must, within 10 days:</p> <p>(a) notify the customer of that fact, in writing, and</p> <p>(b) where the Plumbing that is not Code Compliant threatens, or could threaten, water quality, public health or safety, also notify the Plumbing Regulator of that fact, in writing.</p> <p><i>[Note: Without limiting paragraph (b), an example of Plumbing which must be notified to the Plumbing Regulator under that clause is Plumbing that contains a point where it is possible for non-potable water to come into contact with a drinking water supply.]</i></p>	Audit	Check if the licensee became aware of any plumbing that was not code compliant during the audit period. If so, check if the licensee notified the customer and informed the Plumbing Regulator if the situation threatens, or could threaten, water quality, public health or safety.	<ul style="list-style-type: none"> Report of a cross-connection incident being detected (2/2/2023) as summarised in associated documentation and correspondence, including notifying the customer and IPART, DCCEEW (DPE), NSW Health, council and Fair Trading (as summarised in Form A and Form B notifications). 	<ul style="list-style-type: none"> Compliant. Plumbing that was not code compliant was detected once during the audit period and was notified to the customer and IPART and other relevant parties as appropriate as described in Table A.4.

Table B.4 Audit Criteria – Incident notification clauses

Licence clause	Licence obligation	Instructions	Audit requirements	Evidence assessed	Audit findings
WIC Reg Sch 1 cl. 1(2)	The licensee must immediately notify the following persons of an incident in the conduct of the licensee's activities that threatens, or could threaten, water quality, public health, or safety— (a) IPART, (b) the Minister administering the <i>Public Health Act 2010</i> , (c) the Minister administering the Act, Part 2, (d) a licensed retail supplier supplying water or provides sewerage services by means of the licensee's infrastructure, (e) any other licensed network operator or public water utility whose infrastructure is connected to the licensee's infrastructure.	Audit Note: This clause relates to notification only. Do not audit sub-clause (d) as the same parent company manages the network and retail operations. Sub-clauses (b), (c), (e) are only relevant if triggered by sub-clause (a).	Check whether any relevant incidents have occurred within the audit period that have not been reported. The licensee reported 2 incidents during the audit period. Refer to Attachment C for details and further instructions.	<ul style="list-style-type: none"> Report of a cross-connection incident being detected (2/2/2023) as summarised in associated documentation and correspondence, including notifying the customer and IPART, DCCEEW (DPE), NSW Health, council and Fair Trading (as summarised in Form A and Form B notifications). Report of a high nickel water quality test result being detected (9/12/2022) as summarised in associated documentation and correspondence, including notifying the customer and IPART, DCCEEW (DPE), and NSW Health (as summarised in Form A and Form B notifications). 	<ul style="list-style-type: none"> Compliant. Incidents that occurred during the audit period were notified to IPART and other relevant parties as appropriate

Table B.5 Audit Criteria – Financial capacity

Licence clause	Licence obligation	Instructions	Audit requirements	Evidence assessed	Audit findings
NOL Sch A cl. 4.2	<p>The Licensee must use all reasonable endeavours to procure:</p> <p>a) that the Deed of Financial Capacity & Guarantee remains in effect;</p> <p>b) that the Deed of Financial Capacity & Guarantee is not substantively amended without the prior written agreement of the Minister, except for the amendment of the End Date as contemplated by condition 4.2(c);</p> <p>c) the amendment of the End Date from time to time, such that the Deed of Financial Capacity & Guarantee does not expire while the Licence remains in effect; and</p> <p>d) that no part of the Unpaid Present Entitlements are sought to be paid out.</p>	Audit	The licensee self-reported a non-compliance with NOL Schedule A clause 4.2(c) in its 2022 annual compliance report. Refer to Attachment B for details and further instructions.	<ul style="list-style-type: none"> Deed of Financial Capacity (filename CHBWU - Deed of Variation - Extension of Term - Financial Capacity and Guarantee 2024 (signed).pdf) Screen grab of notification of the amendment to the End Date provided to IPART via WILMA on 6 March 2024. DITA item: "CHB Licence - Deed of Financial Capacity: Term Extension" showing renewal date 	<ul style="list-style-type: none"> Compliant. Solo Water self-reported a non-compliance with NOL Schedule A clause 4.2(c) in its 2022 annual compliance report after becoming aware of the non-compliance which encompassed both the 2021/2022 and 2022/2023 reporting years. Deed of Financial Capacity was corrected with the End Date amended to 22 March 2024 to ensure that the Deed remains in effect. The End Date has subsequently been further amended on 6 March 2024 from 22 March 2024 to 22 March 2025 and remains in effect. To help prevent a recurrence, DITA has been updated to include the item: "CHB Licence - Deed of Financial Capacity: Term Extension" with a 4-week due date warning.

Licence clause	Licence obligation	Instructions	Audit requirements	Evidence assessed	Audit findings
NOL Sch A cl. 4.4	The Licensee must immediately notify IPART in writing: a) of any amendment to the End Date; b) three months before the End Date; c) if the Licensee fails to comply, or becomes aware that the Guarantor has failed to comply, with any term of the Deed of Financial Capacity & Guarantee; and d) if any part of the Unpaid Present Entitlements are sought to be paid out.	Audit	The licensee self-reported a non-compliance with NOL Schedule A clause 4.4(b) in its 2022 annual compliance report. Refer to Attachment B for details and further instructions.	<ul style="list-style-type: none"> Deed of Financial Capacity (filename CHBWU - Deed of Variation - Extension of Term - Financial Capacity and Guarantee 2024 (signed).pdf) Screen grab of notification of the amendment to the End Date provided to IPART via WILMA on 6 March 2024. DITA item: "CHB Licence - Deed of Financial Capacity: Term Extension" showing renewal date 	<ul style="list-style-type: none"> There was no impact to public health, the environment, or service reliability, and was detected and notified to IPART. Compliant. Solo Water self-reported a non-compliance with NOL Schedule A clause 4.2(c) in its 2022 annual compliance report after becoming aware of the non-compliance which encompassed both the 2021/2022 and 2022/2023 reporting years. This non-compliance was reported to IPART on WILMA. Deed of Financial Capacity was corrected with the End Date amended to 22 March 2024 to ensure that the Deed remains in effect. The End Date has subsequently been further amended on 6 March 2024 from 22 March 2024 to 22 March 2025 and remains in effect.

Licence clause	Licence obligation	Instructions	Audit requirements	Evidence assessed	Audit findings
					<ul style="list-style-type: none"> To help prevent a recurrence, DITA has been updated to include the item: "CHB Licence - Deed of Financial Capacity: Term Extension" with a 4-week due date warning. There was no impact to public health, the environment, or service reliability, and was detected and notified to IPART.

C Previous non-compliances audited and findings

Table C.1. Self-reported non-compliances through the 2022 and 2023 annual compliance report

Scheme	Clause ref.	Description	Corrective action taken	Preventative action	Auditor to check	Evidence assessed	Audit findings
16_035	NOL Sch A cl 4.2(c) and cl 4.4(b)	Period of non-compliance: 23/3/2021 to present (the 2022 annual compliance report was signed on 30/8/2022)	CHBWU have identified the gap and are in the process of amending the End Date of the Deed. The anticipated date of full compliance was 30/9/2022.	To review End Date of the Deed of Financial Capacity and Guarantee in conjunction with IPART and DPE as part of any new WICA 2020 licence arrangements.	<ul style="list-style-type: none"> Check whether the corrective action has been undertaken and confirm the status of the non-compliances (close/open). Check whether the preventative controls have been undertaken to prevent/minimise reoccurrence. 	<ul style="list-style-type: none"> Deed of Financial Capacity (filename CHBWU - Deed of Variation - Extension of Term - Financial Capacity and Guarantee 2024 (signed).pdf) 	<ul style="list-style-type: none"> Non-compliance addressed.

Scheme	Clause ref.	Description	Corrective action taken	Preventative action	Auditor to check	Evidence assessed	Audit findings
		<p>CHBWU had not identified when the Deed of Financial Capacity and Guarantee End Date was expiring and the associated reporting requirements relating to notifying IPART in writing 3 months before the End Date.</p> <p>The financial capacity and guarantee remains in effect in practice however the End Date in the Deed has technically expired.</p>		<p>To incorporate the obligations into Solo DITA compliance management system to capture and report when the End Dates are coming due as part of the DITA weekly Nearly Renewal/Due Date reports. DITA forms part of the Solo ISO9001 QA system for managing critical reminders and renewals across the organisation.</p>	<ul style="list-style-type: none"> Cross-check with CHBWU's records to confirm all non-compliances have been reported in the annual report in 2022-23. 	<ul style="list-style-type: none"> Screen grab of notification of the amendment to the End Date provided to IPART via WILMA on 6 March 2024. DITA item: "CHB Licence - Deed of Financial Capacity: Term Extension" showing renewal date 	<ul style="list-style-type: none"> Solo Water self-reported a non-compliance with NOL Schedule A clause 4.2(c) in its 2022 annual compliance report after becoming aware of the non-compliance which encompassed both the 2021/2022 and 2022/2023 reporting years. This non-compliance was reported to IPART on WILMA. The non-compliance was rectified A control to prevent a recurrence was introduced.

Scheme	Clause ref.	Description	Corrective action taken	Preventative action	Auditor to check	Evidence assessed	Audit findings
							<ul style="list-style-type: none"> Specifically the Deed of Financial Capacity was corrected with the End Date amended to 22 March 2024 to ensure that the Deed remains in effect. The End Date has subsequently been further amended on 6 March 2024 from 22 March 2024 to 22 March 2025 and remains in effect. To help prevent a recurrence, DITA has been updated to include the item: "CHB Licence - Deed of Financial Capacity: Term Extension" with a 4-week due date warning.

Note: The self-reported non-compliances in the 2022 and 2023 annual reports covered the periods 2021-2022 and 2022-23, which does not align with the audit period. We need the auditor to check the status of the self-reported non-compliances for completeness. CHBWU reported no non-compliances in their 2023 annual compliance report.

D Incidents reported to IPART during the audit period and audit findings

Table D.1 Incidents reported from 1 November 2021 to January 2024

Date discovered	Notification type	Notification description	Auditor to check	Evidence assessed	Audit findings
8 December 2022	Incident – water quality (drinking water)	Sampling result indicated high Nickel concentration from the Central Coast Council bulk water drinking supply.	<ul style="list-style-type: none"> Check whether the incident has been satisfactorily investigated, actioned, and closed. Check whether the preventative controls have been implemented and remain effective. Check whether additional reportable incidents occurred during the audit period that were not reported. 	<ul style="list-style-type: none"> Report of a high nickel water quality test result being detected (9/12/2022) as summarised in associated documentation and correspondence, including notifying the customer and IPART, DCCEEW (DPE), and NSW Health (as summarised in Form A and Form B notifications). 	<ul style="list-style-type: none"> Incident closed. The incident was satisfactorily investigated, actioned, and closed during the audit period. No additional preventative controls were considered warranted with the incident considered an anomalous isolated test result.
2 February 2023	Incident – cross connection (recycled water and drinking water)	Cross connection identified at a granny flat on a property within the supply scheme. In addition, a plumber has broken and removed the Solo Water tamper proof meter valve lock which was both sealed and tagged and then installed a meter breach directly into Solo Water's recycled water system without their authorisation.	<ul style="list-style-type: none"> Check whether the incident has been satisfactorily investigated, actioned, and closed. Check whether the preventative controls have been implemented and remain effective. Check whether additional reportable incidents occurred during the audit period that were not reported. 	<ul style="list-style-type: none"> Report of a cross-connection incident being detected (2/2/2023) as summarised in associated documentation and correspondence, including notifying the customer and IPART, DCCEEW (DPE), NSW Health, council and Fair Trading (as summarised in Form A and Form B notifications). 	<ul style="list-style-type: none"> Incident closed. The incident was satisfactorily investigated, actioned, and closed during the audit period. Adequate preventative controls were in place noting that it is not possible to prevent all illegal plumbing activity at a site, and SW's processes picked up and rectified this cross-connection as intended so that no additional preventative measures are necessary.

Note: There could be more incidents between now (when the audit scope is being prepared) and the end of the audit period on 31 January 2024.

E Adequacy and implementation of drinking water quality management plan audit findings

The following tables list the elements 2 to 7, 11 and 12 of the Australian Drinking Water Guidelines (ADWG) framework:

- Column 1 – lists the components of each element of the ADWG framework
- Column 2 – summarises actions for each component of the ADWG framework
- Column 3 – the licensee achieves adequacy if a plan substantially meets these outcomes
- Column 4 – the licensee has implemented its plan if it substantially meets these items.

Many of the components and actions noted in the following audit tables are assessable in the context of the licence plan audits but not in the context of the operational audits. The adequacy of the WQP (dw), WQP (npw), SMP, and IOP were previously audited during licence plan audits and found to be compliant, including in 2017 (Stage 1) and 2019 (Stage 2). In addition, the IOP and WQP (npw) were previously audited and found to be compliant in 2023 (Stage 3). The relevant audit reports are as follows:

- Cobbitty Consulting/Water Futures, Catherine Hill Bay Water Utility; Licence Plan Audit (Stage 1 – Interim Scheme) (Version 2.0), 16 August 2017.
- Cobbitty Consulting/Water Futures, Catherine Hill Bay Water Utility; Licence Plan Audit (Stage 2 Scheme) (Version 2.0), 26 March 2019.
- Cobbitty Consulting/Water Futures, Catherine Hill Bay Water Utility; Licence Plan Audit (Stage 3 Scheme) (Version 1.0), October 2023.

This operational audit assessed *Implementation* of those plans for the *relevant* components and actions. The findings are generalised and summarised in the audit tables under Part B of this audit. The exception was for the WQP (dw) for which *Adequacy* was also assessed to identify whether changes to the ADWG arising since 2017, under its 'rolling revision', had created implications for the adequacy of the WQP (dw). What emerged from that assessment of the adequacy of the WQP (dw) was that the only significant change to the ADWG since those audits was the incorporation of microbial 'health-based targets' in September 2022. These changes are not relevant to CHB which receives treated water. Therefore, previous audit findings relating to the adequacy of WQP (dw) remain current.

ADWG Element 2 – assessment of the drinking water supply system

Component	Summary of actions from the ADWG	ADEQUACY IPART considers that a plan which meets the requirements will achieve the following outcomes	IMPLEMENTATION IPART considers that implementation of the plan by the licensees includes (but is not limited to) the following	Evidence assessed	Audit findings
Water supply system analysis	Assemble a team with appropriate knowledge and expertise.	Identifies the appropriate experts (or knowledge and expertise) that assessed the drinking water supply system.	(For the whole Element 2) The drinking water supply system assessment has been prepared and reviewed in accordance with the requirements of element 2 and remains current.	<ul style="list-style-type: none"> • Catherine Hill Bay (Stage 2) Licence Plan Audit Report 2018, Cobbitty Consulting and Water Futures, Report to IPART, November 2018 [(section 4 and appendix B)]. • Catherine Hill Bay (Stage 1) Licence Plan Audit Report 2017, Cobbitty Consulting and Water Futures, Report to IPART, August 2017 [(section 4 and appendix B)]. 	<ul style="list-style-type: none"> • Compliant. • Compliance with the ADWG was audited under previous WQP (dw) licence plan audits in 2017 and 2018. These audits found the WQP (dw) was adequate when assessed against the ADWG. The only significant change to the ADWG since those audits was the incorporation of microbial 'health-based targets' in September 2022. These changes are not relevant to CHB which receives treated water. Therefore, previous audit findings on adequacy remain current. The current Licence Plan was not revised since the previous licence plan audits, and hence it remains adequately documented and implemented.

Component	Summary of actions from the ADWG	ADEQUACY IPART considers that a plan which meets the requirements will achieve the following outcomes	IMPLEMENTATION IPART considers that implementation of the plan by the licensees includes (but is not limited to) the following	Evidence assessed	Audit findings
	Construct a flow diagram of the water supply system from catchment to consumer.	Summarises the results of the drinking water system analysis that has been undertaken by the appropriate team. Includes a comprehensive flow diagram of the water supply system consistent with section 3.2.1 of the ADWG. The diagram outlines all steps and processes, whether or not they are under control of the drinking water supplier, verified by field audits and checked by those with specific knowledge of the system.		<ul style="list-style-type: none"> Field audit against the information given in the licence plan 	<ul style="list-style-type: none"> Compliant. As noted under the first ADWG action "Assemble a team with appropriate knowledge and expertise" adequacy was assessed under the previous WQP (dw) licence plan audits in 2017 and 2018 and no relevant changes to the ADWG have been made since that time. The information given in the licence plan was reviewed for currency against the current infrastructure and its mode of operation and found to be consistent.
	Assemble pertinent information and document key characteristics of the water supply system to be considered.	Each part of the water supply system from catchment to consumer is characterised with respect to water quality, the factors affecting it, and the integrity of the water supply system.		<ul style="list-style-type: none"> As above 	<ul style="list-style-type: none"> As above
	Periodically review the water supply system analysis.	Document a process to periodically review the water supply system analysis, including flow diagram. Analysis remains relevant.		<ul style="list-style-type: none"> As above 	<ul style="list-style-type: none"> As above

Component	Summary of actions from the ADWG	ADEQUACY IPART considers that a plan which meets the requirements will achieve the following outcomes	IMPLEMENTATION IPART considers that implementation of the plan by the licensees includes (but is not limited to) the following	Evidence assessed	Audit findings
		Flow diagrams reflect what is currently in operation from catchment to consumer.			
Assessment of water quality data	Assemble historical data from source waters, treatment plants and finished water supplied to consumers (over time and following specific events).	Assembles historical data regarding source water quality, as well as data from treatment plants and/or finished water supplied to consumers, identifying gaps and assessing reliability of the data (including exceedance data). Water quality data is periodically updated.		<ul style="list-style-type: none"> As above 	<ul style="list-style-type: none"> As above
	List and examine exceedances	See above.		<ul style="list-style-type: none"> As above 	<ul style="list-style-type: none"> As above
	Assess data using tools such as control charts and trends analysis to identify trends and potential problems.	Identifies a process for assessing data to identify trends and potential problems in the water supply system, including any exceedance data. Trends and potential problems resulting from data analysis are identified.		<ul style="list-style-type: none"> As above 	<ul style="list-style-type: none"> As above
Hazard identification and risk assessment¹	Define the approach and methodology to be used for hazard identification and risk assessment	Documents the approach and methodology to be used for hazard identification and risk assessment.		<ul style="list-style-type: none"> As above 	<ul style="list-style-type: none"> As above
	Identify and document hazards, sources and hazardous events for each component of the water supply system	Identifies and documents hazards, sources and hazardous events for each component of the water supply system.		<ul style="list-style-type: none"> As above 	<ul style="list-style-type: none"> As above

¹ The assessment should be consistent with the principles of HACCP. The HACCP risk management framework was adopted for the ADWG (See section 2.1).

Component	Summary of actions from the ADWG	ADEQUACY IPART considers that a plan which meets the requirements will achieve the following outcomes	IMPLEMENTATION IPART considers that implementation of the plan by the licensees includes (but is not limited to) the following	Evidence assessed	Audit findings
	Estimate the level of risk for each identified hazard or hazardous event.	Identifies the estimated level of risk for each identified hazard or hazardous event.		<ul style="list-style-type: none"> As above 	<ul style="list-style-type: none"> As above
	Evaluate the major sources of uncertainty associated with each hazard and hazardous event and consider actions to reduce uncertainty	Identifies the actions necessary to reduce uncertainty associated with each hazard and hazardous event.		<ul style="list-style-type: none"> As above 	<ul style="list-style-type: none"> As above
	Determine significant risks and document priorities for risk management.	Identifies significant risks and documents priorities for risk management		<ul style="list-style-type: none"> As above 	<ul style="list-style-type: none"> As above
	Periodically review and update the hazard identification and risk assessment to incorporate any changes.	Documents a process to periodically review and update the hazard identification and risk assessment to incorporate any changes. The process should also identify triggers for review of hazard identification and risk assessment. Hazard identification and risk assessment have been reviewed and are current.		<ul style="list-style-type: none"> As above 	<ul style="list-style-type: none"> As above

ADWG Element 3 – preventive measures for drinking water quality management

Component	Summary of actions from the ADWG	ADEQUACY IPART considers that a plan which meets the requirements will achieve the following outcomes	IMPLEMENTATION IPART considers that implementation of the plan by the licensees includes (but is not limited to) the following	Evidence assessed	Audit findings
Preventive measures and multiple barriers	Identify existing preventive measures from catchment to consumer for each significant hazard or hazardous event and estimate the residual risk.	Identifies preventive measures from catchment to consumer for each significant hazard or hazardous event and estimates the residual risk.	Documented preventative measures and strategies are implemented.	<ul style="list-style-type: none"> Field audit against the information given in the licence plan. Refer to the Appendices for specific details. 	<ul style="list-style-type: none"> Compliant. As noted under the first ADWG action "Assemble a team with appropriate knowledge and expertise" adequacy was assessed under the previous WQP (dw) licence plan audits in 2017 and 2018 and no relevant changes to the ADWG have been made since that time. The information given in the licence plan was reviewed for currency against the current infrastructure and its mode of operation and found to be implemented in alignment with the plan.
	Evaluate alternative or additional preventive measures where improvement is required.	Defines acceptable risk level and evaluates alternative or additional preventive measures where improvement is required.	Preventive measures remain effective, and barriers are operational.	<ul style="list-style-type: none"> As above 	<ul style="list-style-type: none"> As above
	Document the preventive measures and strategies into a plan addressing each significant risk.	Documents the preventive measures and strategies addressing each significant risk in the scheme WQP-DW risk register.		<ul style="list-style-type: none"> As above 	<ul style="list-style-type: none"> As above

Component	Summary of actions from the ADWG	ADEQUACY IPART considers that a plan which meets the requirements will achieve the following outcomes	IMPLEMENTATION IPART considers that implementation of the plan by the licensees includes (but is not limited to) the following	Evidence assessed	Audit findings
Critical control points	Assess preventive measures throughout the drinking water system to identify critical control points.	Identifies the critical control points. Selection of critical control points, mechanisms for control, critical limits and target criteria are supported by verifiable evidence.	SCADA ² (or other controls system for the treatment plant) set points are consistent with the documented critical limits and target criteria.	<ul style="list-style-type: none"> As above 	<ul style="list-style-type: none"> As above
	Establish mechanisms for operational control.	Identifies the mechanisms for operational control at critical control points	Critical control points are monitored and critical limit exceedances actioned in accordance with procedures.	<ul style="list-style-type: none"> As above 	<ul style="list-style-type: none"> As above
	Document the critical control points, critical limits and target criteria.	Documents the critical control points, critical limits and target criteria. Changes to critical control points, critical limits and target criteria are documented and justified.	Critical control points are reassessed where preventive measures are not effective.	<ul style="list-style-type: none"> As above 	<ul style="list-style-type: none"> As above

² Supervisory control and data acquisition (SCADA).

ADWG Element 4 – operational procedures and process control

Component	Summary of actions from the ADWG	ADEQUACY IPART considers that a plan which meets the requirements will achieve the following outcomes	IMPLEMENTATION IPART considers that implementation of the plan by the licensee includes (but is not limited to) the following	Evidence assessed	Audit findings
Operational procedures	Identify procedures required for processes and activities from catchment to consumer	Clearly identifies all the operational procedures that are required to ensure processes and activities, including preventative measures identified in the risk register are formalised and actioned.	Control of processes is achieved through implementation of operational procedures, monitoring protocols and operational corrections in accordance with the WQP-DW.	<ul style="list-style-type: none"> Field audit against the information given in the licence plan. Refer to the Appendices for specific details. 	<ul style="list-style-type: none"> Compliant. As noted under the first ADWG action "Assemble a team with appropriate knowledge and expertise" adequacy was assessed under the previous WQP (dw) licence plan audits in 2017 and 2018 and no relevant changes to the ADWG have been made since that time. The information given in the licence plan was reviewed for currency against the current infrastructure and its mode of operation and found to be implemented in alignment with the plan.
	Document all procedures and compile into an operations manual	Documents identified operations procedures which form part of the WQP-DW or IOP O&M manual.	Records are maintained to demonstrate implementation of operational procedures, monitoring protocols and operational corrections identified in the WQP-DW.	<ul style="list-style-type: none"> As above 	<ul style="list-style-type: none"> As above

Component	Summary of actions from the ADWG	ADEQUACY IPART considers that a plan which meets the requirements will achieve the following outcomes	IMPLEMENTATION IPART considers that implementation of the plan by the licensees includes (but is not limited to) the following	Evidence assessed	Audit findings
Operational monitoring	Develop monitoring protocols for operational performance of the water supply system, including the selection of operational parameters and criteria, and the routine analysis of results	Documents an operational monitoring protocol which specifies monitoring protocols for operational performance of the system, including the selection of operational parameters and criteria, and the routine analysis of results.		<ul style="list-style-type: none"> As above 	<ul style="list-style-type: none"> As above
	Document monitoring protocols into an operational monitoring plan	See above		<ul style="list-style-type: none"> As above 	<ul style="list-style-type: none"> As above
Corrective action	Establish and document procedures for corrective action to control excursions in operational parameters	Establish procedures for corrective action where operational parameters are not met. There are documented processes in place to ensure that equipment performs adequately and provides sufficient flexibility and process control.		<ul style="list-style-type: none"> As above 	<ul style="list-style-type: none"> As above
	Establish rapid communication systems to deal with unexpected events.	Documents a rapid communication systems to deal with unexpected events, including incident notifications in accordance with the IPART Network Operator's Reporting Manual.	Rapid communications systems responding to unexpected events were followed.	<ul style="list-style-type: none"> As above 	<ul style="list-style-type: none"> As above
Equipment capability and maintenance	Ensure that equipment performs adequately and provides sufficient flexibility and process control.	Equipment and infrastructure in a water supply system needs to be adequately designed and of sufficient capacity (in terms of size, volume and detention times) to handle all flow rates (peak and otherwise), without limiting performance.	Monitoring and measuring equipment is fit for purpose and calibrated at specified intervals.	<ul style="list-style-type: none"> As above 	<ul style="list-style-type: none"> As above

Component	Summary of actions from the ADWG	ADEQUACY IPART considers that a plan which meets the requirements will achieve the following outcomes	IMPLEMENTATION IPART considers that implementation of the plan by the licensee includes (but is not limited to) the following	Evidence assessed	Audit findings
	Establish a program for regular inspection and maintenance of all equipment, including monitoring equipment	Documents an asset management and maintenance program that specifies inspection and maintenance requirements for all equipment, including monitoring equipment. The program should detail schedules and timelines, responsibilities, and resource requirements. Identify where the program is a part of O&M manual or IOP.	Regular inspection and maintenance of all equipment, from source to point of use, ensures continuing process capability. Implementation of IOP is tested separately.	<ul style="list-style-type: none"> As above 	<ul style="list-style-type: none"> As above
Materials and chemicals	Ensure that only approved materials and chemicals are used.	Documents specifications for approved materials and chemicals and procedures for evaluating chemicals, materials and suppliers and ensuring only approved materials and chemicals are used.	Materials used in the drinking water system are appropriate and meet specifications. Chemicals used in the drinking water system are appropriate and meet specifications.	<ul style="list-style-type: none"> As above 	<ul style="list-style-type: none"> As above
	Establish documented procedures for evaluating chemicals, materials and suppliers.	See above	See above	<ul style="list-style-type: none"> As above 	<ul style="list-style-type: none"> As above

ADWG Element 5 – verification of drinking water quality and environmental performance

Component	Summary of actions from the ADWG	ADEQUACY IPART considers that a plan which meets the requirements will achieve the following outcomes	IMPLEMENTATION IPART considers that implementation of the plan by the licensees includes (but is not limited to) the following	Evidence assessed	Audit findings
Drinking water quality monitoring	Determine the characteristics to be monitored in the distribution system and in water as supplied to the consumer.	Identifies the characteristics to be monitored in the distribution system and in water as supplied to the consumer.	The consolidated sampling plan is followed, and monitoring data is verified to be representative and reliable. Procedures for sampling and testing are followed. Adequate resources are provided to ensure valid and reliable results of drinking water quality monitoring.	<ul style="list-style-type: none"> Field audit against the information given in the licence plan. Refer to the Appendix for Appendices details. 	<ul style="list-style-type: none"> Compliant. As noted under the first ADWG action "Assemble a team with appropriate knowledge and expertise" adequacy was assessed under the previous WQP (dw) licence plan audits in 2017 and 2018 and no relevant changes to the ADWG have been made since that time. The information given in the licence plan was reviewed for currency against the current infrastructure and its mode of operation and found to be implemented in alignment with the plan.
	Establish and document a sampling plan for each characteristic, including the location and frequency of sampling.	Identifies the points at which monitoring will be undertaken. Identifies the agreed levels of service with the scheme retail supplier.	Results of drinking water quality verification monitoring are used to evaluate conformity to criteria set in the WQP-DW. Complaints and comments from consumers are evaluated, whether received from the scheme retail supplier or direct to network operator.	<ul style="list-style-type: none"> As above 	<ul style="list-style-type: none"> As above

Component	Summary of actions from the ADWG	ADEQUACY IPART considers that a plan which meets the requirements will achieve the following outcomes	IMPLEMENTATION IPART considers that implementation of the plan by the licensees includes (but is not limited to) the following	Evidence assessed	Audit findings
	Ensure monitoring data are representative and reliable	Identifies the frequency of monitoring in order to obtain meaningful information and statistical validity.		• As above	• As above
Consumer satisfaction	Establish a consumer complaint and response program, including appropriate training of employees.	Documents program, or arrangements for ensuring that the scheme retail supplier has a program, to monitor satisfaction of consumers and train the people responsible for the program.	Short-term evaluation of monitoring results and consumer feedback is used to verify that the quality of the drinking water conforms to established targets and meets consumer expectations.	• As above	• As above
Short-term evaluation of results	Establish procedures for the daily review of drinking water quality monitoring data and consumer satisfaction	Documents procedures for the short-term review of monitoring data. Procedures include rapid notification process for the contracted laboratory for out of specification results. Procedures include a notification process for the retail supplier to report issues/complaints regarding water quality from end-users.	Corrective responses to non-conformances are implemented in accordance with documented procedures, or where network operator has deviated from documented procedure; reasons are documented the response has provided an equal or improved management of risk. Planned changes are controlled and consequences of unintended changes reviewed, action taken to mitigate any adverse effects, as necessary	• As above	• As above
	Develop reporting mechanisms internally and externally, where required	Documents reporting mechanism for the short-term evaluation of results internally and externally, as appropriate.		• As above	• As above
Corrective action	Establish and document procedures for corrective action in response to non-conformance or consumer feedback	Documents procedures for corrective action in response to non-conformances or feedback from users via the scheme retail supplier.		• As above	• As above

Component	Summary of actions from the ADWG	ADEQUACY IPART considers that a plan which meets the requirements will achieve the following outcomes	IMPLEMENTATION IPART considers that implementation of the plan by the licensees includes (but is not limited to) the following	Evidence assessed	Audit findings
	Establish rapid communication systems to deal with unexpected events.	Documents rapid communication systems to deal with unexpected events, including incident notification in accordance with the IPART Network Operator's Reporting Manual.		<ul style="list-style-type: none"> As above 	<ul style="list-style-type: none"> As above

ADWG Element 6 – management of incidents and emergencies

Component	Summary of actions from the ADWG	ADEQUACY IPART considers that a plan which meets the requirements will achieve the following outcomes	IMPLEMENTATION IPART considers that implementation of the plan by the licensees includes (but is not limited to) the following	Evidence assessed	Audit findings
Communication	Define communication protocols with the involvement of relevant agencies and prepare a contact list of key people, agencies and businesses.	Identifies communications protocols. Includes an up to date contact list of key people, appropriate agencies and stakeholders relevant to management of incidents and emergencies.		<ul style="list-style-type: none"> Field audit against the information given in the licence plan. Refer to the Appendices for specific details. 	<ul style="list-style-type: none"> Compliant. As noted under the first ADWG action "Assemble a team with appropriate knowledge and expertise" adequacy was assessed under the previous WQP (dw) licence plan audits in 2017 and 2018 and no relevant changes to the ADWG have been made since that time.

Component	Summary of actions from the ADWG	ADEQUACY IPART considers that a plan which meets the requirements will achieve the following outcomes	IMPLEMENTATION IPART considers that implementation of the plan by the licensees includes (but is not limited to) the following	Evidence assessed	Audit findings
	Develop a public and media communications strategy.	Documents the public and media communications strategy developed in consultation with the scheme retail supplier.		<ul style="list-style-type: none"> As above 	<ul style="list-style-type: none"> As above
Incident and emergency response protocols	Define potential incidents and emergencies and document procedures and response plans with the involvement of relevant agencies.	Defines declared and notifiable incidents and emergencies. Documents procedures and response plans, including rapid communications for incident notification, which reflect events identified in the risk register and notification requirements set out in IPART's Network Operator's Reporting Manual and Incident Notification Forms A and B.	Incident and emergency communications protocols are implemented as described in the WQP-DW, and follow the requirements of IPART's Network Operator's Reporting Manual and notification requirements as set out in the WIC Regulations sch 1, cl.1(2).	<ul style="list-style-type: none"> As above 	<ul style="list-style-type: none"> As above
	Train employees and regularly test emergency response plans.	Identifies training and testing of plan.	Employees are trained in incident and emergency response protocols and the plans are tested as appropriate.	<ul style="list-style-type: none"> As above 	<ul style="list-style-type: none"> As above

Component	Summary of actions from the ADWG	ADEQUACY IPART considers that a plan which meets the requirements will achieve the following outcomes	IMPLEMENTATION IPART considers that implementation of the plan by the licensees includes (but is not limited to) the following	Evidence assessed	Audit findings
	Investigate any incidents or emergencies and revise protocols as necessary.	Identifies the process for reviewing incidents or emergencies and identifying new risks, or new or improved preventative measures and making any necessary amendments to operational procedures or protocols.	Following any incident and emergency situation, an investigation is undertaken, and all appropriate staff debriefed. Protocols have been revised as necessary.	<ul style="list-style-type: none"> As above 	<ul style="list-style-type: none"> As above

ADWG Element 7 – operator, contractor and end user awareness and training

Component	Summary of actions from the ADWG	ADEQUACY IPART considers that a plan which meets the requirements will achieve the following outcomes	IMPLEMENTATION IPART considers that implementation of the plan by the licensee includes (but is not limited to) the following	Evidence assessed	Audit findings
Employee awareness and involvement	Develop mechanisms and communication procedures to increase employees' awareness of and participation in drinking water quality management.	Identifies mechanisms and communication procedures to increase employee awareness of, and participation in managing drinking water quality.	<p>Operators have a general understanding of the regulatory requirements of licensed network operators under the WIC Act regarding protection of public health.</p> <p>Operators and relevant contractors are aware of the drinking water policy and objectives of the WQP-DW (overlap with element 1).</p> <p>Operators and relevant contractors understand drinking water quality risk management principles set out in the WQP-DW, characteristics of the drinking water supply system and preventive strategies in place, consequences of system failures and how to apply and follow risk management principles.</p> <p>Operators and relevant contractors should be aware of the arrangements that the scheme retail supplier has in place to manage its obligations (e.g. communication with consumers) and that the licensee must/use best endeavours to ensure those arrangements align with licensee's risk controls.</p>	<ul style="list-style-type: none"> Field audit against the information given in the licence plan. Refer to the Appendices for specific details. 	<ul style="list-style-type: none"> Compliant. As noted under the first ADWG action "Assemble a team with appropriate knowledge and expertise" adequacy was assessed under the previous WQP (dw) licence plan audits in 2017 and 2018 and no relevant changes to the ADWG have been made since that time. The information given in the licence plan was reviewed for currency against the current infrastructure and its mode of operation and found to be implemented in alignment with the plan.

Component	Summary of actions from the ADWG	ADEQUACY IPART considers that a plan which meets the requirements will achieve the following outcomes	IMPLEMENTATION IPART considers that implementation of the plan by the licensees includes (but is not limited to) the following	Evidence assessed	Audit findings
Employee training	Ensure that employees, including contractors, maintain the appropriate experience and qualifications	Ensure employees, including contractors, are suitably competent and adequately trained to carry out their duties.	Employees and contractors are aware of their contribution of the effectiveness of implementing the WQP-DW, including benefits of improved performance, and the implications of not conforming to the requirements set out in the WQP-DW.	<ul style="list-style-type: none"> As above 	<ul style="list-style-type: none"> As above
	Identify training needs and ensure resources are available to support training programs.	Identify a process for identifying any gaps in experience and training of operators and key contractors and identify ongoing training needs. Includes a schedule of training with timeframes and resources identified.	Identified training has been delivered, or is appropriately scheduled to be delivered so that operators and contractors are competent.	<ul style="list-style-type: none"> As above 	<ul style="list-style-type: none"> As above
	Document training and maintain records of all training sessions.	Document processes and procedures for employee training and maintaining records of all employees training.	Records are maintained of all employee training, and processes and procedure for training are followed.	<ul style="list-style-type: none"> As above 	<ul style="list-style-type: none"> As above

ADWG Element 11 – evaluation and audit

Component	Summary of actions from the ADWG	ADEQUACY IPART considers that a plan which meets the requirements will achieve the following outcomes	IMPLEMENTATION IPART considers that implementation of the plan by the licensees includes (but is not limited to) the following	Evidence assessed	Audit findings
Long-term evaluation of results	Collect and evaluate long-term data to assess performance and identify problems.	Documents processes and practices for the collection and evaluation of long-term data to assess performance and identifying problems.	Evaluation of long-term data is undertaken and results reviewed. Problems from long-term data evaluation are identified and addressed.	<ul style="list-style-type: none"> Field audit against the information given in the licence plan. Refer to the Appendices for specific details. 	<ul style="list-style-type: none"> Compliant. As noted under the first ADWG action "Assemble a team with appropriate knowledge and expertise" adequacy was assessed under the previous WQP (dw) licence plan audits in 2017 and 2018 and no relevant changes to the ADWG have been made since that time. The information given in the licence plan was reviewed for currency against the current infrastructure and its mode of operation and found to be implemented in alignment with the plan.
	Document and report results.	Documents processes and practices for documenting and reporting results.	See above	<ul style="list-style-type: none"> As above 	<ul style="list-style-type: none"> As above

Component	Summary of actions from the ADWG	ADEQUACY IPART considers that a plan which meets the requirements will achieve the following outcomes	IMPLEMENTATION IPART considers that implementation of the plan by the licensees includes (but is not limited to) the following	Evidence assessed	Audit findings
Audit of drinking water quality management	Establish processes for internal and external audits.	Documents process for effective implementation and maintenance of drinking water quality management internal and external audits. The frequency and schedule of audits, as well as the responsibilities, requirements, procedures and reporting mechanisms, should be defined.	Internal audit undertaken at planned intervals.	<ul style="list-style-type: none"> As above 	<ul style="list-style-type: none"> As above
	Document and communicate audit results.	Identify that audit results are to be communicated to relevant stakeholders. Audit results should be considered as a part of element 12 implementation.	Audit results are documented and communicated.	<ul style="list-style-type: none"> As above 	<ul style="list-style-type: none"> As above

ADWG Element 12 – review and continuous improvement

Component	Summary of actions from the ADWG	ADEQUACY IPART considers that a plan which meets the requirements will achieve the following outcomes	IMPLEMENTATION IPART considers that implementation of the plan by the licensees includes (but is not limited to) the following	Evidence assessed	Audit findings
Review by senior managers	Senior managers review the effectiveness of the management system	Identify the process for senior managers to review the effectiveness of the management system and evaluation of the need for change, including approving and monitoring implementation of audit programs and review of audit outcomes.	Effectiveness of the management system is reviewed by senior managers, and the need for change is evaluated. Decisions and actions by senior management are documented.	<ul style="list-style-type: none"> Field audit against the information given in the licence plan. Refer to the Appendices for specific details. 	<ul style="list-style-type: none"> Compliant.

Component	Summary of actions from the ADWG	ADEQUACY IPART considers that a plan which meets the requirements will achieve the following outcomes	IMPLEMENTATION IPART considers that implementation of the plan by the licensees includes (but is not limited to) the following	Evidence assessed	Audit findings
					<ul style="list-style-type: none"> As noted under the first ADWG action "Assemble a team with appropriate knowledge and expertise" adequacy was assessed under the previous WQP (dw) licence plan audits in 2017 and 2018 and no relevant changes to the ADWG have been made since that time. The information given in the licence plan was reviewed for currency against the current infrastructure and its mode of operation and found to be implemented in alignment with the plan.
	Evaluate the need for change.	Processes and practices for periodic review of the WQP-DW have been established and triggers of significant change that require the WQP-DW to be re-audited determined. (WIC Reg sch 1, cl 7(5)(a))		<ul style="list-style-type: none"> As above 	<ul style="list-style-type: none"> As above

Component	Summary of actions from the ADWG	ADEQUACY IPART considers that a plan which meets the requirements will achieve the following outcomes	IMPLEMENTATION IPART considers that implementation of the plan by the licensees includes (but is not limited to) the following	Evidence assessed	Audit findings
Drinking water quality management improvement plan	Develop a drinking water quality management improvement plan.	A drinking water quality management improvement plan has been developed to address identified needs. Results of analysis and evaluation, and output from the management review is considered to determine need for inclusion in improvement plan. The improvement plan is endorsed by senior executive and the WQP-DW commits to implementing the plan. The improvement plan includes objectives, actions to be taken, accountability, timelines and reporting.	The improvement plan is implemented according to the plan.	<ul style="list-style-type: none"> • As above 	<ul style="list-style-type: none"> • As above
	Ensure that the plan is communicated and implemented, and that improvements are monitored for effectiveness.	A process for communicating, implementing and monitoring effectiveness of continual improvement actions has been established.	The improvement plan is communicated and implemented, and improvements are monitored for effectiveness.	<ul style="list-style-type: none"> • As above 	<ul style="list-style-type: none"> • As above

F Adequacy and implementation of recycled water quality management plan audit findings

The following tables list the elements 2 to 7, 11 and 12 of the Australian Guidelines for Water Recycling (AGWR) framework:

- Column 1 – lists the components of each element of the AGWR framework
- Column 2 – summarises actions for each component of the AGWR framework
- Column 3 – the licensee achieves adequacy if a plan substantially meets these outcomes – **not in scope**
- Column 4 – the licensee has implemented its plan if it substantially meets these items.

Many of the components and actions noted in the following audit tables are assessable in the context of the licence plan audits but not in the context of the operational audits. The adequacy of the WQP (dw), WQP (npw), SMP, and IOP were previously audited during licence plan audits and found to be compliant, including in 2017 (Stage 1) and 2019 (Stage 2). In addition, the IOP and WQP (npw) were previously audited and found to be compliant in 2023 (Stage 3). The relevant audit reports are as follows:

- Cobbitty Consulting/Water Futures, Catherine Hill Bay Water Utility; Licence Plan Audit (Stage 1 – Interim Scheme) (Version 2.0), 16 August 2017.
- Cobbitty Consulting/Water Futures, Catherine Hill Bay Water Utility; Licence Plan Audit (Stage 2 Scheme) (Version 2.0), 26 March 2019.
- Cobbitty Consulting/Water Futures, Catherine Hill Bay Water Utility; Licence Plan Audit (Stage 3 Scheme) (Version 1.0), October 2023.

This operational audit assessed *Implementation* of those plans for the *relevant* components and actions. The findings are generalised and summarised in the audit tables under Part B of this audit.

AGWR Element 2 – assessment of the recycled water system³

Component	Summary of actions from the AGWR	ADEQUACY IPART considers that a plan which meets the requirements will achieve the following outcomes	IMPLEMENTATION IPART considers that implementation of the plan by the licensees includes (but is not limited to) the following	Evidence assessed	Audit findings
Intended uses and source of recycled water	Identify source of water.	Identifies the intended sources and uses (as authorised by licence), routes of exposure, receiving environments, endpoints and environmental effects.	The recycled water system assessment has been prepared and reviewed in accordance with the requirements of element 2 and remains current.	<ul style="list-style-type: none"> Field audit against the information given in the licence plan. Refer to the Appendices for specific details. 	<ul style="list-style-type: none"> Compliant. The information given in the licence plan was reviewed for currency against the current infrastructure and its mode of operation and found to be implemented in alignment with the plan.
	Identify intended uses, routes of exposure, receiving environments, endpoints and effects.	Identifies the intended end uses (as authorised by licence), routes of exposure, receiving environments, endpoints and environmental effects.		<ul style="list-style-type: none"> As above 	<ul style="list-style-type: none"> As above
	Consider inadvertent or unauthorised uses.	Identifies possible unintended and unauthorised end uses. If there is a staged approach, the WQP-RW identifies current/existing and planned sources of recycled water and an indicative timeframe or milestones as appropriate.		<ul style="list-style-type: none"> As above 	<ul style="list-style-type: none"> As above
Recycled water system analysis	Assemble pertinent information and document key characteristics of the recycled water system to be considered.	Each part of the recycled water system from source to end use is characterised with respect to water quality, the factors affecting water quality, and the likely variability.		<ul style="list-style-type: none"> As above 	<ul style="list-style-type: none"> As above

³ The assessment should be consistent with the principles of HACCP. The HACCP risk management framework was adopted for both the ADWG and AGWR, see section 1.2.2 and chapter 5 of the AGWR.

Component	Summary of actions from the AGWR	ADEQUACY IPART considers that a plan which meets the requirements will achieve the following outcomes	IMPLEMENTATION IPART considers that implementation of the plan by the licensees includes (but is not limited to) the following	Evidence assessed	Audit findings
	Assemble a team with appropriate knowledge and expertise.	Identifies the appropriate experts (or knowledge and expertise) that assessed the recycled water system.		<ul style="list-style-type: none"> As above 	<ul style="list-style-type: none"> As above
	Construct a flow diagram of the recycled water system from the source to the application or receiving environments.	Summarises the results of the recycled water system analysis that has been undertaken by the appropriate team. Includes a comprehensive flow diagram of the recycled water system consistent with section 2.2.2 of the AGWR. The diagram outlines all steps and processes from source to end use, including fate of out of specification recycled water and where the scheme has been constructed, the flow diagram has been verified by those with specific knowledge of the system.		<ul style="list-style-type: none"> As above 	<ul style="list-style-type: none"> As above
	Periodically review the recycled water system analysis.	Documents a process to periodically review the recycled water system analysis, including flow diagram. Analysis remains relevant. Flow diagrams reflect what is currently in operation from source to end-use.		<ul style="list-style-type: none"> As above 	<ul style="list-style-type: none"> As above

Component	Summary of actions from the AGWR	ADEQUACY	IMPLEMENTATION	Evidence assessed	Audit findings
		IPART considers that a plan which meets the requirements will achieve the following outcomes	IPART considers that implementation of the plan by the licensees includes (but is not limited to) the following		
Assessment of water quality data	Assemble historical data about sewage, greywater or stormwater quality, as well as data from treatment plants and of recycled water supplied to users; identify gaps and assess reliability of data.	Assembles historical data regarding source water quality, as well as data from treatment plants and/or recycled water supplied to users, identifying gaps and assessing reliability of the data (including exceedance data). Water quality data is periodically updated.		<ul style="list-style-type: none"> As above 	<ul style="list-style-type: none"> As above
	Assess data (using tools such as control charts and trends analysis), to identify trends and potential problems.	Identifies a process for assessing data to identify trends and potential problems in the recycled water system, including any exceedance data. Trends and potential problems resulting from data analysis are identified.		<ul style="list-style-type: none"> As above 	<ul style="list-style-type: none"> As above
Hazard identification and risk assessment	Define the approach to hazard identification and risk assessment, considering both public and ecological health.	Documents the approach and methodology to be used for hazard identification and risk assessment, considering both public and ecological health.		<ul style="list-style-type: none"> As above 	<ul style="list-style-type: none"> As above
	Periodically review and update the hazard identification and risk assessment to incorporate any changes.	Documents a process to periodically review and update the hazard identification and risk assessment to incorporate any changes. The process should also identify triggers for review of hazard identification and risk assessment. Hazard identification and risk assessment have been reviewed and are current.		<ul style="list-style-type: none"> As above 	<ul style="list-style-type: none"> As above

Component	Summary of actions from the AGWR	ADEQUACY IPART considers that a plan which meets the requirements will achieve the following outcomes	IMPLEMENTATION IPART considers that implementation of the plan by the licensees includes (but is not limited to) the following	Evidence assessed	Audit findings
	Identify and document hazards and hazardous events for each component of the recycled water system.	Identifies and documents hazards, sources and hazardous events for each component of the recycled water system.		<ul style="list-style-type: none"> As above 	<ul style="list-style-type: none"> As above
	Estimate the level of risk for each identified hazard or hazardous event.	Identifies the estimated level of risk for each identified hazard or hazardous event.		<ul style="list-style-type: none"> As above 	<ul style="list-style-type: none"> As above
	Consider inadvertent and unauthorised use or discharge.	Includes inadvertent and unauthorised use and discharge in risk assessment		<ul style="list-style-type: none"> As above 	<ul style="list-style-type: none"> As above
	Determine significant risks and document priorities for risk management.	Identifies significant risks and documents priorities for risk management		<ul style="list-style-type: none"> As above 	<ul style="list-style-type: none"> As above
	Evaluate the major sources of uncertainty associated with each hazard and hazardous event and consider actions to reduce uncertainty.	Identifies the actions necessary to reduce uncertainty associated with each hazard and hazardous event.		<ul style="list-style-type: none"> As above 	<ul style="list-style-type: none"> As above

AGWR Element 3 – preventive measures for recycled water management

Component	Summary of actions from the AGWR	ADEQUACY IPART considers that a plan which meets the requirements will achieve the following outcomes	IMPLEMENTATION IPART considers that implementation of the plan by the licensees includes (but is not limited to) the following	Evidence assessed	Audit findings
Preventive measures and multiple barriers	Identify existing preventive measures system-wide for each significant hazard or hazardous event, and estimate the residual risk.	Identifies preventive measures from source to end-use for each significant hazard or hazardous event and estimates the residual risk.	Documented preventative measures and strategies are implemented Preventive measures remain effective, and barriers are operational.	<ul style="list-style-type: none"> Field audit against the information given in the licence plan. Refer to the Appendices for specific details. 	<ul style="list-style-type: none"> Compliant. The information given in the licence plan was reviewed for currency against the current infrastructure and its mode of operation and found to be implemented in alignment with the plan.
	Identify alternative or additional preventive measures that are required to ensure risks are reduced to acceptable levels.	Defines acceptable risk level and evaluates alternative or additional preventive measures where improvement is required.		<ul style="list-style-type: none"> As above 	<ul style="list-style-type: none"> As above
	Document the preventive measures and strategies, addressing each significant risk	Documents the preventive measures and strategies for addressing each significant risk in the scheme WQP-RW risk register.		<ul style="list-style-type: none"> As above 	<ul style="list-style-type: none"> As above
Critical control points	Assess preventive measures throughout the recycled water system to identify critical control points.	Identifies the critical control points. Selection of critical control points, mechanisms for control, critical limits and target criteria are supported by verifiable evidence.	SCADA ⁴ (or other controls system for the treatment plant) set points are consistent with the documented critical limits and target criteria.	<ul style="list-style-type: none"> As above 	<ul style="list-style-type: none"> As above
	Establish mechanisms for operational control.	Identifies the mechanisms for operational control at critical control points		<ul style="list-style-type: none"> As above 	<ul style="list-style-type: none"> As above

⁴ Supervisory control and data acquisition (SCADA)

Component	Summary of actions from the AGWR	ADEQUACY IPART considers that a plan which meets the requirements will achieve the following outcomes	IMPLEMENTATION IPART considers that implementation of the plan by the licensees includes (but is not limited to) the following	Evidence assessed	Audit findings
	Document the critical control points, critical limits and target criteria.	Documents the critical control points, critical limits and target criteria. Changes to critical control points, critical limits and target criteria are documented and justified.	Critical control points are monitored, and critical limit exceedances actioned in accordance with procedures. Critical control points are reassessed where preventive measures are not effective.	<ul style="list-style-type: none"> As above 	<ul style="list-style-type: none"> As above

AGWR Element 4 – operational procedures and process control

Component	Summary of actions from the AGWR	ADEQUACY IPART considers that a plan which meets the requirements will achieve the following outcomes	IMPLEMENTATION IPART considers that implementation of the plan by the licensees includes (but is not limited to) the following	Evidence assessed	Audit findings
Operational procedures	Identify procedures required for all processes and activities applied within the whole recycled water system (source to use)	Clearly identifies all the operational procedures that are required to ensure processes and activities, including preventative measures identified in the risk register are formalised and actioned.	Control of processes is achieved through implementation of operational procedures, monitoring protocols and operational corrections in accordance with the WQP-RW.	<ul style="list-style-type: none"> Field audit against the information given in the licence plan. Refer to the Appendices for specific details. 	<ul style="list-style-type: none"> Compliant. The information given in the licence plan was reviewed for currency against the current infrastructure and its mode of operation and found to be implemented in alignment with the plan.
	Document all procedures and compile into an operations manual	Documents identified operations procedures which form part of the WQP-RW or IOP O&M manual.		<ul style="list-style-type: none"> As above 	<ul style="list-style-type: none"> As above
Operational monitoring	Develop monitoring protocols for operational performance of the recycled water supply system, including the selection of operational parameters and criteria, and the routine analysis of results.	Documents an operational monitoring protocol which specifies monitoring protocols for operational performance of the system, including the selection of operational parameters and criteria, and the routine analysis of results.	Records are maintained to demonstrate implementation of operational procedures, monitoring protocols and operational corrections identified in the WQP-RW.	<ul style="list-style-type: none"> As above 	<ul style="list-style-type: none"> As above
	Document monitoring protocols into an operational monitoring plan	See above		<ul style="list-style-type: none"> As above 	<ul style="list-style-type: none"> As above
Operational corrections	Establish and document procedures for corrective action where operational parameters are not met.	Determine operational parameters (criteria) for fit-for-purpose recycled water for the end uses authorised by the licence.		<ul style="list-style-type: none"> As above 	<ul style="list-style-type: none"> As above

Component	Summary of actions from the AGWR	ADEQUACY IPART considers that a plan which meets the requirements will achieve the following outcomes	IMPLEMENTATION IPART considers that implementation of the plan by the licensees includes (but is not limited to) the following	Evidence assessed	Audit findings
		Establish procedures for corrective action where operational parameters are not met. There are documented processes in place to ensure that equipment performs adequately and provides sufficient flexibility and process control.			
	Establish rapid communication systems to deal with unexpected events.	Documents a rapid communication systems to deal with unexpected events, including incident notifications in accordance with the IPART Network Operator's Reporting Manual.	Rapid communications systems responding to unexpected events were followed.	<ul style="list-style-type: none"> As above 	<ul style="list-style-type: none"> As above
Equipment capability and maintenance	Ensure that equipment performs adequately and provides sufficient flexibility and process control.	Establish and document arrangements for preventing out-of-specification water being supplied to end-use. Equipment and infrastructure in the recycled water supply system need to be adequately designed and of sufficient capacity (in terms of size, volume and detention times) to handle all flow rates (peak and otherwise), without limiting performance.	Monitoring and measuring equipment is fit for purpose and calibrated at specified intervals.	<ul style="list-style-type: none"> As above 	<ul style="list-style-type: none"> As above

Component	Summary of actions from the AGWR	ADEQUACY IPART considers that a plan which meets the requirements will achieve the following outcomes	IMPLEMENTATION IPART considers that implementation of the plan by the licensees includes (but is not limited to) the following	Evidence assessed	Audit findings
	Establish a program for regular inspection and maintenance of all equipment, including monitoring equipment	Documents an asset management and maintenance program that specifies inspection and maintenance requirements for all equipment, including monitoring equipment. The program should detail schedules and timelines, responsibilities, and resource requirements. Identify where the program is a part of O&M manual or IOP.	Regular inspection and maintenance of all equipment, from source to point of use, ensures continuing process capability. <i>Implementation of IOP is tested separately.</i>	<ul style="list-style-type: none"> As above 	<ul style="list-style-type: none"> As above
Materials and chemicals	Ensure that only approved materials and chemicals are used.	Documents specifications for approved materials and chemicals and procedures for evaluating chemicals, materials and suppliers and ensuring only approved materials and chemicals are used.	Materials used in the recycled water system are appropriate and meet specifications. Chemicals used in the recycled water system are appropriate and meet specifications.	<ul style="list-style-type: none"> As above 	<ul style="list-style-type: none"> As above
	Establish documented procedures for evaluating chemicals, materials and suppliers.	See above	See above	<ul style="list-style-type: none"> As above 	<ul style="list-style-type: none"> As above

AGWR Element 5 – verification of recycled water quality and environmental performance

Component	Summary of actions from the AGWR	ADEQUACY IPART considers that a plan which meets the requirements will achieve the following outcomes	IMPLEMENTATION IPART considers that implementation of the plan by the licensees includes (but is not limited to) the following	Evidence assessed	Audit findings
Recycled water quality monitoring	Determine the characteristics to be monitored.	Identifies the characteristics to be monitored in the recycled water system.	The consolidated sampling plan is followed, and monitoring data is verified to be representative and reliable. Procedures for sampling and testing are followed. Adequate resources are provided to ensure valid and reliable results of recycled water quality monitoring.	<ul style="list-style-type: none"> Field audit against the information given in the licence plan. Refer to the Appendices for specific details. 	<ul style="list-style-type: none"> Compliant. The information given in the licence plan was reviewed for currency against the current infrastructure and its mode of operation and found to be implemented in alignment with the plan.
	Determine the points at which monitoring will be undertaken.	Identifies the points at which monitoring will be undertaken. Identifies the agreed levels of service with the scheme retail supplier.	Results of recycled water verification monitoring are used to evaluate conformity to criteria set in the WQP-RW. Complaints and comments from users are evaluated, whether received from the scheme retail supplier or direct to network operator.	<ul style="list-style-type: none"> As above 	<ul style="list-style-type: none"> As above
	Determine the frequency of monitoring	Identifies the frequency of monitoring in order to obtain meaningful information and statistical validity.	Short-term evaluation of monitoring results and user feedback is used to verify that the quality of the recycled water conforms to established targets and meets user expectations.	<ul style="list-style-type: none"> As above 	<ul style="list-style-type: none"> As above
Application site and receiving environment monitoring	Determine the characteristics to be monitored and the points at which monitoring will be undertaken	Identifies the characteristics to be monitored at application sites and receiving environment, including the location and frequency of sampling.		<ul style="list-style-type: none"> As above 	<ul style="list-style-type: none"> As above
Documentation and reliability	Establish and document a sampling plan for each characteristic, including the location and frequency of sampling, ensuring that monitoring data is representative and reliable.	Documents a consolidated sampling plan, including procurement procedures for sampling and testing that are suitable for verification of whether the scheme is performing as intended.		<ul style="list-style-type: none"> As above 	<ul style="list-style-type: none"> As above

Component	Summary of actions from the AGWR	ADEQUACY IPART considers that a plan which meets the requirements will achieve the following outcomes	IMPLEMENTATION IPART considers that implementation of the plan by the licensees includes (but is not limited to) the following	Evidence assessed	Audit findings
Satisfaction of users of recycled water	Establish an inquiry and response program for users of recycled water, including appropriate training of people responsible for the program.	Documents program, or arrangements for ensuring that the scheme retail supplier has a program, to monitor satisfaction of users and train the people responsible for the program.	Corrective responses to non-conformances are implemented in accordance with documented procedures; or where network operator has deviated from documented procedure, reasons are documented and the response has provided an equal or improved management of risk.	• As above	• As above
Short-term evaluation of results	Establish procedures for the short-term review of monitoring data and satisfaction of users of recycled water.	Documents procedures for the short-term review of monitoring data. Procedures include rapid notification process for the contracted laboratory for out of specification results. Procedures include a notification process for the retail supplier to report issues/complaints regarding water quality from end-users.	Planned changes are controlled and consequences of unintended changes reviewed, action taken to mitigate any adverse effects, as necessary.	• As above	• As above
Corrective responses	Develop reporting mechanisms internally and externally, where required	Documents reporting mechanism for the short-term evaluation of results internally and externally, as appropriate.		• As above	• As above
Corrective responses	Establish and document procedures for corrective responses to non-conformance or feedback from users of recycled water.	Documents procedures for corrective action in response to non-conformances or feedback from users via the scheme retail supplier.		• As above	• As above
	Establish rapid communication systems to deal with unexpected events.	Documents rapid communication systems to deal with unexpected events, including incident notification in accordance with the IPART Network Operator's Reporting Manual.		• As above	• As above

AGWR Element 6 – management of incidents and emergencies

Component	Summary of actions from the AGWR	ADEQUACY IPART considers that a plan which meets the requirements will achieve the following outcomes	IMPLEMENTATION IPART considers that implementation of the plan by the licensees includes (but is not limited to) the following	Evidence assessed	Audit findings
Communication	Define communication protocols with the involvement of relevant agencies and prepare a contact list of key people, agencies and stakeholders.	Identifies communications protocols Includes an up to date contact list of key people, appropriate agencies and stakeholders relevant to management of incidents and emergencies.		<ul style="list-style-type: none"> Field audit against the information given in the licence plan. Refer to the Appendices for specific details. 	<ul style="list-style-type: none"> Compliant. The information given in the licence plan was reviewed for currency against the current infrastructure and its mode of operation and found to be implemented in alignment with the plan.
	Develop a public and media communications strategy.	Documents the public and media communications strategy developed in consultation with the scheme retail supplier.		<ul style="list-style-type: none"> As above 	<ul style="list-style-type: none"> As above
Incident and emergency response protocols	Define potential incidents and emergencies and document procedures and response plans with the involvement of relevant agencies.	Define declared and notifiable incidents and emergencies. Document procedures and response plans, including rapid communications for incident notification, which reflect events identified in the risk register and notification requirements set out in IPART's Network Operator's Reporting Manual and Incident Notification Forms A and B.	Incident and emergency communications protocols are implemented as described in the WQP-RW, and follow the requirements of IPART's Network Operator's Reporting Manual and notification requirements as set out in the WIC Regulations sch 1, cl.1(2).	<ul style="list-style-type: none"> As above 	<ul style="list-style-type: none"> As above
	Train employees and regularly test emergency response plans.	Identifies training and testing plan.	Employees are trained in incident and emergency response protocols and the plans are tested as appropriate.	<ul style="list-style-type: none"> As above 	<ul style="list-style-type: none"> As above

Component	Summary of actions from the AGWR	ADEQUACY IPART considers that a plan which meets the requirements will achieve the following outcomes	IMPLEMENTATION IPART considers that implementation of the plan by the licensees includes (but is not limited to) the following	Evidence assessed	Audit findings
	Investigate any incidents or emergencies and revise protocols as necessary.	Identifies the process for reviewing incidents or emergencies and identifying new risks, or new or improved preventative measures and making any necessary amendments to operational procedures or protocols.	Following any incident and emergency situation, an investigation is undertaken, and all appropriate staff debriefed. Protocols have been revised as necessary.	<ul style="list-style-type: none"> As above 	<ul style="list-style-type: none"> As above

AGWR Element 7 – operator, contractor and end user awareness and training

Component	Summary of actions from the AGWR	ADEQUACY IPART considers that a plan which meets the requirements will achieve the following outcomes	IMPLEMENTATION IPART considers that implementation of the plan by the licensees includes (but is not limited to) the following	Evidence assessed	Audit findings
Operator, contractor and end user awareness and involvement	Develop mechanisms and communication procedures to increase operator, contractor and end user awareness of, and participation in, recycled water quality management and environmental protection.	Identifies mechanisms and communication procedures to increase operator and contractor awareness of, and participation in managing recycled water quality and environmental protection. Documents process (arrangements) for ensuring that the scheme retail supplier fulfils the requirement to ensure end user awareness.	Operators have a general understanding of the regulatory requirements of licensed network operators under the WIC Act. – protection of public health Operators and relevant contractors are aware of the recycled water policy and objectives of the WQP-RW (overlap with element 1). Operators and relevant contractors understand water quality and environmental risk management principles set out in the WQP-RW, characteristics of the recycled water supply system and preventive strategies in place, consequences of system failures and how to apply and follow risk management principles. Operators and relevant contractors should be aware of the arrangements that the scheme retail supplier has in place to manage its obligations (eg. communication with end users, training) and that the licensee must/use best endeavours to ensure those arrangements align with licensee's risk controls.	<ul style="list-style-type: none"> Field audit against the information given in the licence plan. Refer to the Appendices for specific details. 	<ul style="list-style-type: none"> Compliant. The information given in the licence plan was reviewed for currency against the current infrastructure and its mode of operation and found to be implemented in alignment with the plan.

Component	Summary of actions from the AGWR	ADEQUACY IPART considers that a plan which meets the requirements will achieve the following outcomes	IMPLEMENTATION IPART considers that implementation of the plan by the licensees includes (but is not limited to) the following	Evidence assessed	Audit findings
Operator, contractor and end user training	Ensure that operators, contractors and end users maintain the appropriate experience and qualifications.	Ensure employees, including contractors, are suitably competent and adequately trained to carry out their duties. Document process (arrangements) for ensuring that the scheme retail supplier fulfils the requirement to ensure end user maintain appropriate experience and qualifications <i>as appropriate</i> .	Operators and contractors are aware of their contribution of the effectiveness of implementing the WQP-RW, including benefits of improved performance, and the implications of not conforming to the requirements set out in the WQP-RW. There are arrangements in place with the scheme retail supplier for ensuring ongoing user awareness.	• As above	• As above
	Identify training needs and ensure resources are available to support training programs.	Identify a process for identifying any gaps in experience and training of operators and key contractors and identify ongoing training needs. Includes a schedule of training with timeframes and resources identified.	Identified training has been delivered, or is appropriately scheduled to be delivered so that operators and contractors are competent.	• As above	• As above
	Document training and maintain records of all training sessions.	Document processes and procedures for employee training and maintaining records of all employees training.	Records are maintained of all employee training, and processes and procedure for training are followed.	• As above	• As above

AGWR Element 11 – evaluation and audit

Component	Summary of actions from the AGWR	ADEQUACY IPART considers that a plan which meets the requirements will achieve the following outcomes	IMPLEMENTATION IPART considers that implementation of the plan by the licensees includes (but is not limited to) the following	Evidence assessed	Audit findings
Long-term evaluation of results	Collect and evaluate long-term data to assess performance and identify problems.	Documents processes and practices for the collection and evaluation of long-term data to assess performance and identifying problems.	Evaluation of long-term data is undertaken and results reviewed. Problems from long-term data evaluation are identified and addressed	<ul style="list-style-type: none"> Field audit against the information given in the licence plan. Refer to the Appendices for specific details. 	<ul style="list-style-type: none"> Compliant. The information given in the licence plan was reviewed for currency against the current infrastructure and its mode of operation and found to be implemented in alignment with the plan.
	Document and report results.	Documents processes and practices for documenting and reporting results.	<i>See above.</i>	<ul style="list-style-type: none"> As above 	<ul style="list-style-type: none"> As above
Audit of recycled water quality management	Establish processes for internal and external audits.	Documents process for effective implementation and maintenance of recycled water quality management internal and external audits. The frequency and schedule of audits, as well as the responsibilities, requirements, procedures and reporting mechanisms, should be defined. Internal audits should also assess effectiveness of end-user controls.	Internal audit undertaken at planned intervals.	<ul style="list-style-type: none"> As above 	<ul style="list-style-type: none"> As above
	Document and communicate audit results.	Identify that audit results are to be communicated to relevant stakeholders. <i>Audit results should be considered as a part of element 12 implementation.</i>	Audit results are documented and communicated.	<ul style="list-style-type: none"> As above 	<ul style="list-style-type: none"> As above

AGWR Element 12 – review and continuous improvement

Component	Summary of actions from the AGWR	ADEQUACY IPART considers that a plan which meets the requirements will achieve the following outcomes	IMPLEMENTATION IPART considers that implementation of the plan by the licensees includes (but is not limited to) the following	Evidence assessed	Audit findings
Review by senior managers	Senior managers review the effectiveness of the management system and evaluate the need for change.	<p>Identify the process for senior managers to review the effectiveness of the management system and evaluation of the need for change, including approving and monitoring implementation of audit programs and review of audit outcomes.</p> <p>Processes and practices for periodic review of the WQP-RW have been established and triggers of significant change that require the WQP-RW to be re-audited determined. (WIC Reg sch 1, cl 7(5)(a))</p>	<p>Effectiveness of the management system is reviewed by senior managers, and the need for change is evaluated.</p> <p>Decisions and actions by senior management are documented.</p>	<ul style="list-style-type: none"> Field audit against the information given in the licence plan. Refer to the Appendices for specific details. 	<ul style="list-style-type: none"> Compliant. The information given in the licence plan was reviewed for currency against the current infrastructure and its mode of operation and found to be implemented in alignment with the plan.
Recycled water quality management improvement plan	Develop a recycled water quality management improvement plan.	<p>A recycled water quality management improvement plan has been developed to address identified needs. Results of analysis and evaluation, and output from the management review is considered to determine need for inclusion in improvement plan.</p> <p>The improvement plan is endorsed by senior executive and the WQP-RW commits to implementing the plan.</p> <p>The improvement plan includes objectives, actions to be taken, accountability, timelines and reporting.</p>	The improvement plan is implemented according to the plan.	<ul style="list-style-type: none"> As above 	<ul style="list-style-type: none"> As above

Component	Summary of actions from the AGWR	ADEQUACY IPART considers that a plan which meets the requirements will achieve the following outcomes	IMPLEMENTATION IPART considers that implementation of the plan by the licensees includes (but is not limited to) the following	Evidence assessed	Audit findings
	Ensure that the plan is communicated and implemented, and that improvements are monitored for effectiveness.	A process for communicating, implementing and monitoring effectiveness of continual improvement actions has been established.	The improvement plan is communicated and implemented, and improvements are monitored for effectiveness.	<ul style="list-style-type: none"> As above 	<ul style="list-style-type: none"> As above

APPENDICES

G Audit Appendices

Appendix 1. Field inspection photographs



Figure 1. Overview of closed water storage tanks inspected, showing them to be ostensibly in good condition.

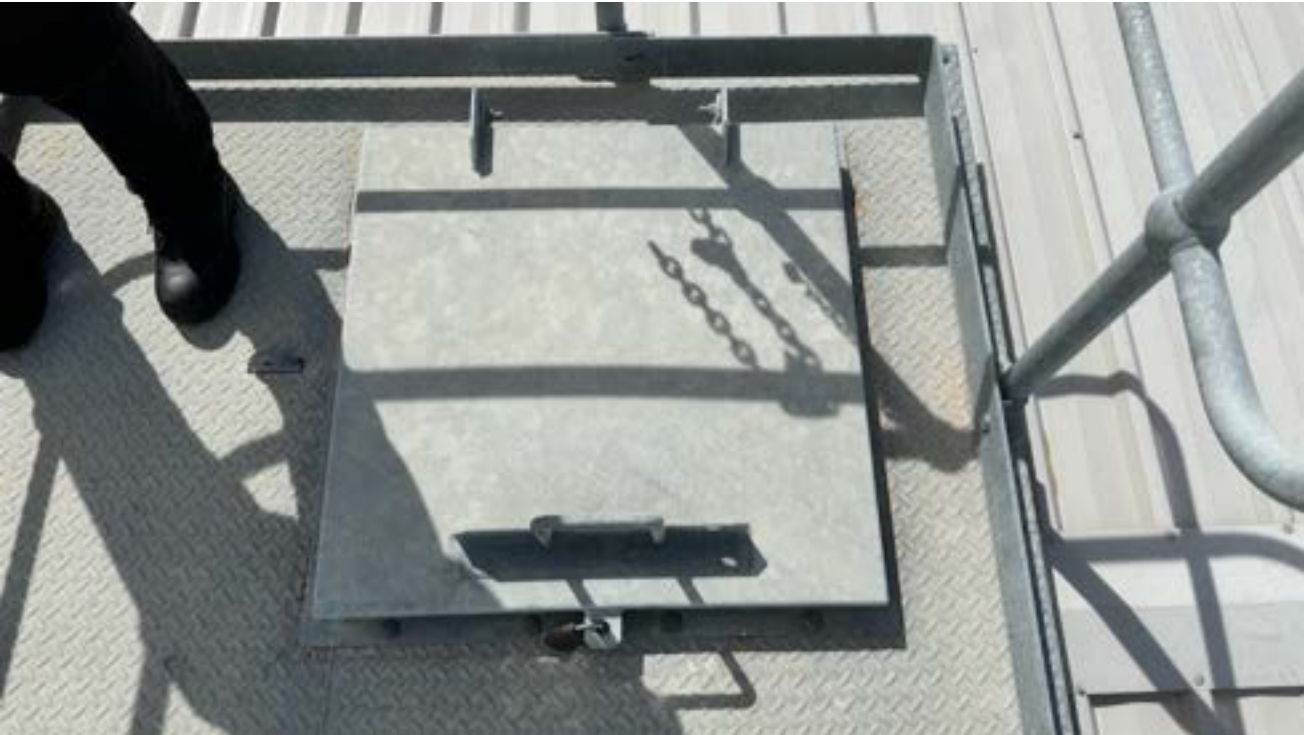


Figure 2. Secure, locked hatch of treated drinking water storage tank, in good condition.



Figure 3. Intact and functional vent on treated drinking water storage tank, in good condition.



Figure 4. Level sensor entry point on treated drinking water storage tank – this was the only visible entry point.



Figure 5. Established Stage 7 property meters (30 Raywood Circuit) showing intact water and lilac-coloured recycled water connections.



Figure 6. Established (Stage 1) property meters (9 Anouska Street) showing intact water and lilac-coloured recycled water connections.



Figure 7. Established sewer connection (Anouska Street) showing intact and accessible structures.



Figure 8. Established Stage 6 (2021) connection (13-15 Hopwood Close) showing intact and accessible structures and lilac-coloured recycled water.



Figure 9. New connection (32 Raywood Circuit) showing locking pin on recycled water and feed from potable system.



Figure 10. New connection (11 Hopwood Close) showing locking pin on recycled water and feed from potable system.



Figure 11. Interface with Central Coast City Council.



Figure 12. Interface with Central Coast City Council showing pumps and sampling point.

Appendix 2. Principal field audit inspection items summary

Inspection item	Findings
Connection point to Central Coast City Council.	Inspected and found to be in sound condition. Sampling point clearly labelled. Door alarm, pressure sensor, and plug-in generator point were observed.
Examples of property sewer connections.	A sample of sites was inspected of various ages, and all were found to be in sound condition.
Examples of water meters at customer properties	A sample of sites was inspected of various ages and all were found to be in sound condition.
Treatment plant	The plant was inspected and found to be in sound condition.
Bunding	The bunding was inspected and found to be in sound condition. The site is banded with isolation drains so if spills occur it can be contained and pumped out.
Chemicals	Citric acid, acetic acid, polyaluminium chloride, sodium hypochlorite and sodium hydroxide were retained on site, in clearly labelled and banded containers. Chemicals were clearly labelled.
Instruments	Instruments were tagged and operational. Instrument displays were checked against SCADA and were scaled correctly and reading within appropriate ranges for sound operation. This included: <ul style="list-style-type: none"> • free chlorine 1.6 mg/L with pH 7.8 on the drinking water; and • for recycled water: <ul style="list-style-type: none"> ○ TSS 7.2 g/L and turbidity 0.04 NTU for MBR train 1; ○ TSS 10.3 g/L and turbidity 0.05 NTU for MBR train 2; ○ UVT 79%; ○ contact tank free chlorine 1.1 mg/L with pH 7.5; and ○ storage tank free chlorine 2.5 mg/L with pH 7.8.
Waste handling	At present trucking is occurring to manage excess recycled water production – beyond that which can be recycled.
Odour control	No odour was noted. The auditee noted that there were some challenges managing odour but that to date this had not resulted in adverse customer impacts.
Leakage	Leakage was not observed during the inspection.
Storage tanks	To the extent that they could be safely inspected, treated water storage tanks were in good condition. They were found to be closed, locked, with no visible vermin entry points, missing roof sheets, or major runoff entry points, or any defects of significance. The only potential entry point into the treated drinking water storage tank was a small hole for the level sensor cable entry (Figure 4). Given the residual chlorine levels present within the tank this is within the normal bounds of accepted potential runoff entry within the water sector. However, as an OFI , Solo Water may wish to consider finding alternative ways to measure treated water storage tank level to reduce the risk of trace microbial ingress and potential <i>E. coli</i> detections via the small hole for the level sensor cable entry.
Vectors	Vector habitat and associated hazards were not observed.
Security	The site security was inspected and found to be sound.
Meters	Water meters were observed at key billing interfaces.
Backflow	No registered backflow devices were inspected.
Lab records	Laboratory reports for the audit period were provided.
Monitoring instruments and SCADA system records	SCADA historian traces were observed for selected parts of the audit period. The system was in an operational state during the audit, but recycled water production from the treatment plant was not occurring at the time of the field audit since the recycled water storage tank was not at a low enough level to trigger the treatment plant to restart production. Filtered water turbidity from the recycled water plant was consistently at or below 0.1 NTU (below the 0.3 NTU 'diversion to waste' value). The UV trace showed short dips when the wiper occluded the analyser, indicating it was functioning. Setpoints checked during the field audit included those for CCP1 (UF), CCP2 (UV), and CCP3 (free chlorine). Specific parameters checked included: <ul style="list-style-type: none"> • free chlorine and pH for drinking water; and

Inspection item	Findings
	<ul style="list-style-type: none"> • filtered water turbidity, UVT, UVI, UV dose, UV flow rate, free chlorine residual, free chlorine pH and free chlorine flow rate for recycled water. • Pressure differential was confirmed as being maintained between the recycled (lower) and potable (higher), (3.15 vs. 3.74 Bar, respectively) during the field audit. SCADA records were checked during the field audit. • Filtered water turbidity from the recycled water plant was consistently around or below 0.1 NTU (below the 0.3 NTU diversion to waste value). The UV trace showed short dips when the wiper occluded the analyser, indicating it was functioning.
Calibration records and associated reagents and standards	Evidence of calibration of the pH meter was visible from changes in the SCADA reading, showing that the calibration was occurring. Turbidity reference standards, and turbidity and chlorine measurements, require placing glass containers into optical instruments. Dust, sunscreen, fingerprints, etc., can interfere with those readings by occluding light. It was noticed that the field lab didn't have dedicated suitable wipes to clean glassware to be used in optical instruments. As an opportunity for improvement (OFI) Solo Water may wish to provide suitable wipes to ensure that glassware can be suitably cleaned to prevent such interference arising from hand contact or dust build up on vials, containers, and reference standards. Field auditing found the reagents used were current: <ul style="list-style-type: none"> • Australian Scientific pH 4 and 7 reagents were newly supplied and within their one-year shelf life. • Hach pH 10 reagent expires 4/25. • EC 1413 $\mu\text{S}/\text{cm}$ reagent is new, 6/12/23, and within its one-year shelf life. • DPD reagent expires 3/28 and 5/27. • The 20 NTU reference standard expires 11.24. • The 10, 20, 100 and 800 NTU reference standards expire 7/24.
Sample taps	Samples taps were suitable, appropriately placed, with goosenecks that could be flamed, and appropriately labelled.
Easement of sewer (out of scope)	Not inspected.

Appendix 3. Principal desktop audit items evidence summary

Item	Evidence	Findings
Contacts	IMS-CONT-G-1679-SW - CHB Stakeholder Register.xlsx	The stakeholder register was up to date and relevant. At some point DPIE will update its contact details.
Process flow diagram	The process flow diagram audited was as given in the licence plans and on the SCADA screen.	The process flow, as shown on the SCADA screens and observed by inspection was consistent, with the diagram given in the licence plans.
System description	The system description audited was as given in the licence plans.	The system description was as given in the licence plans. The new excess recycled water pipeline was not yet operational. Trucking occurs in the interim. The new excess recycled water pipeline has been commissioned.
SOPs for operations	IMS-GNRL-D-4411-SW - RWTP CCP 1 MBR UF Membranes Management Procedure.pdf IMS-GNRL-D-4412-SW - RWTP CCP 2 UV Disinfection Management Procedure.pdf IMS-GNRL-D-4413-SW - RWTP CCP 3 Chlorine Contact Tank Management Procedure.pdf IMS-GNRL-D-4414-SW - CCP Residual Chlorination Management Procedure.pdf IMS-GNRL-D-4415-SW - SMP CCP Raw Sewage Containment Procedure.pdf	Procedures were current for CCP operation. This included the critical limit setpoints which were checked against the SCADA system.
SCADA setpoints	Setpoint screen grabs provided by Solo Water during March 2024 and field inspections during the audit	SCADA setpoints were aligned with the licence plans.
SCADA records	SCADA historian records during the audit	SCADA records were provided for the audit period and retained by Solo Water.
Routine O&M	Job Plan Summary extract 26 March 2024	Routine O&M is scheduled via Job Plan. Records were provided of the Job Plan activities scheduled during the audit period.

Item	Evidence	Findings
Calibration schedule	PROCESS EQUIPMENT CALIBRATION REGISTER Form: IMS-CONT-F-1695-SW	The instrument verification and calibration schedule and record-keeping form covers the free chlorine, turbidity, pH, and conductivity (online and handheld) and UVT (online). Completed forms were provided for the period ending March 2023 and December 2023, with results first reported as far back as November 2021 for some parameters.
Chemical receipt system	Redox is the main chemical supplier.	Citric acid, acetic acid, polyaluminium chloride, sodium hypochlorite and sodium hydroxide are retained on site. 12.5% sodium hypochlorite is supplied in 200 L drums then batched to 1% in IBCs.
Lab testing results records	IMS-CONT-G-1680-SW - CHB Water Quality Monitoring.xlsx	Lab records were provided for the audit period and retained by Solo Water.
Customer complaints response	Solo Water Customer Feedback_Q2_2023-24.xlsx Solo Water Customer Feedback_Q4_2022-23.xlsx	Customer feedback records, and response to that feedback, were provided for the audit period and retained by Solo Water.
Incident system	INCIDENT RESPONSE AND NOTIFICATION PROTOCOL Management Plan: IMS-AIIR-B-0041-SW	The incident response plan remains current. At some point DPIE will update its contact details.
Training register	User Competencies for Water and Wastewater Systems Operators	Timothy Sazdanoff and Ronnie Paine are the main operators, with a new operator being currently trained (Andrew).
Improvement plan	IMS-CONT-G-1698-SW - Continuous Improvement Request Register.xlsx	Improvement ideas are logged, allocated, and tracked, with evidence provided of relevant actions being undertaken during the audit period. An example was given of a process to improve backflow prevention device testing.
Recycled Water Policy	Solo, Recycled Water Policy, (IMS-OPER-A-8346-SW) (Issue No: 1.0), November 2022.	The policy remained up to date.
Website	Solo Water website: http://www.solowater.com.au/	The website remained up to date and accessible. Requisite information is available.

Item	Evidence	Findings
Code of Conduct	Solo Water, Catherine Hill Bay Water Utility Scheme; Solo Water and Central Coast Council; Code of Conduct – Interconnections (Sewer); Surplus Recycled Water Transfer Main Connection to Gwandalan STP (Version 2.0_Final), February 2023.	This new code of conduct for the excess recycled water production was in place.
Risk Register	Solo, Catherine Hill Bay Water Utility; Risk Register – Stage 3 (IMS-ENVM-G-3635-SW) (Version 4.0), 14 September 2022.	The risk register remained current.
Customer Contract	Solo Water, Customer Contract (IMS-OPER-G-8299-SW) (Issue No: 1.2), January 2021.	The Customer Contract remained current.
Owner's Manual	Solo Water, Catherine Hill Bay; Home Owner's Manual (IMS-OPER-C-8312-SW) (Issue No: 1.4), September 2023.	The Owner's Manual remained current.
Compliance Register	Document: IMS-COMP-G-0810 - REGULATORY COMPLIANCE REGISTER.pdf (undated extract).	The Compliance Register remained current.
Regulatory & Formal Requirements Register	MS Excel workbook: IMS-CONT-G-1677-SW - CHB Regulatory & Formal Requirements.xlsx (updated February 2023).	The summary of regulatory and formal requirements remained current.
Stakeholder Register	MS Excel workbook: IMS-CONT-G-1679-SW - CHB Stakeholder Register.xlsx (Issue No: 1.2; updated April 2023).	The summary of stakeholders remained current.

Appendix 4. Commonly used acronyms or abbreviations

Acronym or abbreviation	In full	Synonym
WQP (npw)	Water Quality Plan (non-potable water)	RWQMP
WQP (dw)	Water Quality Plan (drinking water)	DWQMP
IOP	Solo Water, Catherine Hill Bay Water Utility; Infrastructure Operating Plan; Stage 2 (reference: IMS-OPER-B-8297-SW), Revision 2.4, 13 October 2021 Solo Water, Catherine Hill Bay Water Utility; Infrastructure Operating Plan; Stage 3 (reference: IMS-OPER-B-8297-SW), Revision 3.0, 22 February 2023	
DWQMP	Solo Water, Catherine Hill Bay Water Utility; Drinking Water Quality Management Plan; Stage 2 (reference: IMS-ENVM-B-3727-SW) (Revision 2.2), 28 June 2021. Solo Water, Catherine Hill Bay Water Utility; Drinking Water Quality Management Plan; Stage 3 (reference: IMS-ENVM-B-3727-SW) (Revision 3.0), 21 February 2023.	WQP (dw)
RWQMP	Solo Water, Catherine Hill Bay Water Utility; Recycled Water Quality Management Plan; Stage 2 (reference: IMS-ENVM-B-3727-SW), Revision 1.4, 13 October 2021 Solo Water, Catherine Hill Bay Water Utility; Recycled Water Quality Management Plan; Stage 3 (reference: IMS-ENVM-B-3727-SW), Revision 2.0, 21 February 2023	WQP (npw)
SMP	Solo Water, Catherine Hill Bay Water Utility; Sewage Management Plan; Stage 2 (reference: IMS-ENVM-B-3728-SW), Revision 2.3, 28 June 2021. Solo Water, Catherine Hill Bay Water Utility; Sewage Management Plan; Stage 3 (reference: IMS-ENVM-B-3728-SW), Revision 3.0, 21 February 2023.	